

TALLINN UNIVERSITY OF TECHNOLOGY

School of Business and Governance

Department of Business Administration

Ayla Rahimli

**CUSTOMER ENGAGEMENT REVOLUTION WITH THE USE  
OF NFTs**

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Supervisor: Airi Freimuth, MSc, doctoral researcher in TalTech

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I hereby declare that I have compiled the thesis independently and all works, important standpoints and data by other authors have been properly referenced and the same paper has not been previously presented for grading.

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Ayla Rahimli .....

(signature, date)

Student code: 195563TVTB

Student e-mail address: ayla.ragimli17@gmail.com

Supervisor: Airi Freimuth, MSc, doctoral researcher in TalTech

The paper conforms to requirements in force

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Chairman of the Defence Committee:

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## **ABSTRACT**

With the continued evolution of technologies, the ways in which marketing activities are performed are constantly changing. Therefore, it is important to adopt new technologies and make sure businesses benefit from them. Non-fungible tokens (NFTs) became popular only in 2021, and their true potential is yet to be determined. The lack of academic literature does not make it easier for marketers to understand how to implement NFTs into their work. It has always been important to sustain positive relationships with customers, so customer engagement is a crucial factor for any brand. Constantly engaging customers in a brand's activity and maintaining them engaged is a challenge. For this reason, this thesis focuses on the relationship between customer engagement and non-fungible tokens to understand how the latter can revolutionize customer engagement. The questions that will be answered in this thesis are to what extent NFTs increase or decrease customer engagement and to what extent customer engagement differs among owners and non-owners of NFTs. To analyse the results, quantitative methods and descriptive statistics were used. The main results of the paper suggest that brands when implementing NFTs in marketing practises should focus on different characteristics of NFTs when dealing with two primary groups “owners” and “non-owners”. Furthermore, different factors result in positive and negative engagement depending on the chosen target audience. Focus on different generations and their preferences should be considered separately, as for different generations, different factors are important.

Keywords: Customer engagement, non-fungible tokens, NFTs

## INTRODUCTION

With the use of innovative technologies in marketing processes, customer-brand relationships are constantly changing and evolving. Due to technologies, marketers have to adapt and find new opportunities to engage with future and existing customers, moreover, it is very important for marketers to understand how new technologies influence customers (Grewal *et al.* 2019, 1). One such recent radical technological advancement is non-fungible tokens (NFTs), which gained increased attention in 2021 (Dowling 2022) and has been actively introduced and used by several well-known companies. With the introduction of non-fungible tokens, brands are no longer limited to providing physical goods to customers, now they can seize blockchain and non-fungible tokens to grant one-of-a-kind digital products to customers (Wilson *et al.* 2021, 1).

The use of technologies is ever-evolving, and brands are not bound to use only social media to increase customer engagement and customer-brand interaction (Santini *et al.* 2020, 1212). An increasing number of brands are introducing non-fungible tokens to develop engagement, introduce a new product and create value (Fai 2021, 4) in the form of exclusive access to a brand's community or product. Brands in different sectors are already taking advantage of non-fungible tokens. These include brands from the apparel sector, such as Nike, Adidas, Levi's, and Zara; in the food sector, McDonald's, Taco Bells, Pringles, and Pizza Hut; in the luxury goods sector, Balmain, Prada, Dolce & Gabbana, and Louis Vuitton. Non-fungible tokens present numerous advantages and advancements in promoting, preserving, engaging, and widening customer networks.

Because NFT is a new technological innovation, customers and brands are yet to discover its full capabilities. However, as can be seen in the example of Adidas, Prada, Pizza Hut, and other well-known brands, NFTs already create a lot of engagement and interaction between customers and brands, although it is yet to be determined whether NFTs result in more positively or negatively engagement. However, it also worth mentioning that, because of some specific features that will be later introduced in this paper, NFTs allow companies to gain revenue even after they sell their digital products to customers. Other than that, non-fungible tokens engage customers because,

after purchasing one token in the form of a video, image, digital art, or in any other form, customers can get additional value such as special promotional vouchers, exclusive memberships, NFTs as an addition to a physical item or improvement of loyal programs (Agrawal *et al.* 2018), or even become part of a private brand community (Treiblmaier 2021, 9). In that way, customers not only stay engaged but also more aware and loyal to a brand.

The research problem is that customer engagement is constantly changing, engaging, and disengaging (Lievens, Blažević 2021, 129) and as NFTs are relatively new, many scientists admit that there has been very little in-depth investigation of NFTs' potential and aspects by academic researchers (Regner *et al.* 2019, 2) and there is insufficient number of research addressing how NFTs can be used in marketing (Chohan, Paschen 2021, 2) and specifically, if NFTs' features create positive or negative engagement. Thus, the aim of this paper is to research how non-fungible tokens affect customer engagement processes.

In support, the following research question will be answered in this paper:

1. To what extent do NFTs increase or decrease customer engagement?
2. To what extent does customer engagement differ among owners and non-owners of NFTs?

This paper consists of three chapters. The first chapter is a literature review that provides scientific background and theoretical concepts about customer engagement, non-fungible tokens, and blockchain technology, as well as information about relevant antecedents of customer engagement and its relation to non-fungible tokens. Positive and negative aspects of both customer engagement and non-fungible tokens are also discussed to provide a more detailed description and understand their influence on customers. The second part of the thesis elaborates on the choice of the methodology, in particular questionnaire is used to carry out the research. The last part of this paper presents the analysis, results, discussion, and conclusion collected and analysed in this paper.

# 1. LITERATURE REVIEW

This chapter aims to provide background information and a definition of customer engagement and its antecedents, describe aspects of positive and negative customer engagement, its connection to non-fungible tokens (NFTs), the definition of NFTs and its connection to blockchain technology, as well as positive and negative characteristics of NFTs. This part gives the scientific basis for the proposed importance of NFTs' influence on customer engagement.

## 1.1. Customer Engagement

The concept of customer engagement has been discussed in academic literature for quite some time, although there is no unilateral meaning of customer engagement and its antecedents (Maslowska *et al.* 2016, 469). In marketing literature, customer engagement (CE) is defined as the active relationship that a customer has with the brand (Hollebeek, Sprott 2019, 4). The Economist Journal defines engagement as the development of experiences that enable brands to create stronger, more meaningful, and long-lasting relationships with customers (The Economist Intelligence Unit 2007, 2). According to Pansari and Kuman (2017), if a customer is emotionally attached and satisfied with the relationship with a brand then this means that customer is engaged. Customer engagement also refers to emotional, cognitive, behavioural, and social contribution related to brand interactions (Hollebeek *et al.* 2016, 166). The continuous growth of the internet and the invention of advanced digital technologies has coincided with rising interest in customer engagement (Sashi 2012, 254). Due to technological advancements, the view of customer engagement had to be re-evaluated. Hence within an online context, Mollen and Wilson (2010) define customer engagement as a cognitive and affective commitment to always changing interaction with the brand through a website or other technology-oriented platforms (Mollen, Wilson 2010). Akin to Larivière *et al.* (2017), due to technologies, the modification of customers' roles in relationships with brands has changed, making customers to take a role of innovators, coordinators, enablers, and differentiators (Larivière *et al.* 2017). That means customers take part in developing or delivering products, community building, engaging with other customers, interacting with non-customers, and differentiation between various offers provided in the

marketplace (Shawky *et al.* 2020, 568). Customer engagement also contributes to customer-brand interaction both directly and indirectly (Pansari, Kumar 2016, 306). The most common factors that affect engagement in the digital context are entertainment, social, and information factors (Tsiotsou 2019, 8). Harmeling (2016) in his paper supports the views of Jaakola and Alexandr (2014) who propose that CE is a customer's optional contribution towards the brand that include more than only purchase (Jaakola, Alexandr 2014 referenced in Harmeling 2016, 314). In order to understand customer engagement, it is important to acknowledge the existence of customer-brand relationships, to develop and sustain that relationship creating value for both customer and brand is important (Kumar, Reinartz 2016). In the case of online environment such as social media, customer engagement according to Chen *et al.* (2016), involves a high level of customer engagement that allows for a better brand performance (Chen *et al.* 2016, 412) and positively affects profitability and sales growth (Neff 2007 referenced in Chen *et al.* 2016, 412). With so many choices available for customers through online platforms, it becomes more and more difficult to sustain engagement and relationships with new and existing customers. For this reason, it is important to promote and create new value and channels to engage with customers.

Customer engagement is an important part of any organization. It allows to constantly engage customers in the brand's activity and maintain their interest. According to Shawky *et al.* (2020) success of any brand across a variety of industries including retail and sports largely depends on customer engagement (Shawky *et al.* 2020, 567). It is crucial for a brand to sustain customers engaged after they purchase a product, the brand has to create an environment where not only the brand engages with customers but also customers engage with each other (Perkins 2015, 261). With the increasing evolution of technologies customers and brands found new ways to interact with each other (de Oliveira Santini *et al.* 2020, 1212), digitalization pushed brands to adopt innovative solutions to the changing modes of customer engagement (Hollebeek, Spott 2019, 14). For example, brands use social media to develop social interactions based on brand-related content (*Ibid.*, 188), and referring to the views of Dick and Basu (1994) loyal customers are an important part of brand's success and though their loyalty positive word of mouth (WOM) can be achieved (Dick, Basu referenced in Naumann, Bowden 2015, 57) or in case of social platforms e-WOM, Larivière *et al.* (2017) also highlighted the importance of customers and their active contribution in engaging current customers and prospective customers and building communities (Shawky *et al.* 2020, 586). Building community for a brand is important as it directly affects customer engagement. Muniz and O'Guinn (2001) stated that a brand community (BC) is defined as a community that is not bound by geographic borders and is built on a regulated set of social ties



among brands' admirers (Muniz, O'Guinn 2001, 412). In the online environment, one of the important drivers of engagement in the brand community is social identity, according to social identity theory, people are attached to membership in various social groups, and social identity theory also implies that people strive for good self-esteem and that it is acquired through social membership (Hughes, Ahearne 2010, 83). In this vein, NFTs provide customers a chance of becoming a member of an exclusive community. By purchasing a token customers can get additional perks for example, holding memberships to private communities.

One of the important antecedents of customer engagement is value (Hollebeek, Spott 2019, 312; Kumar, Reinartz 2016, 37). To ensure that customers return to the brand it is essential to create customer value which leads to increased customer satisfaction and attachment causing increased customer engagement (Hollebeek, Spott 2019, 312). According to Kumar and Reinartz (2016), customer engagement is important in marketing practice because it helps to create and communicate value to customers thus resulting in customer loyalty, profitability (Brodie, *et al.* 2011, 252), and as stated by Naumann, Bowden (2015), trust. Thus, according to research done by Hollebeek and Spott (2019), Kumar and Reinartz (2016), Neumann and Bowden (2015), and van Doorn *et al.* (2010), possible important antecedents of customer engagement could be value, loyalty, profitability, and trust.

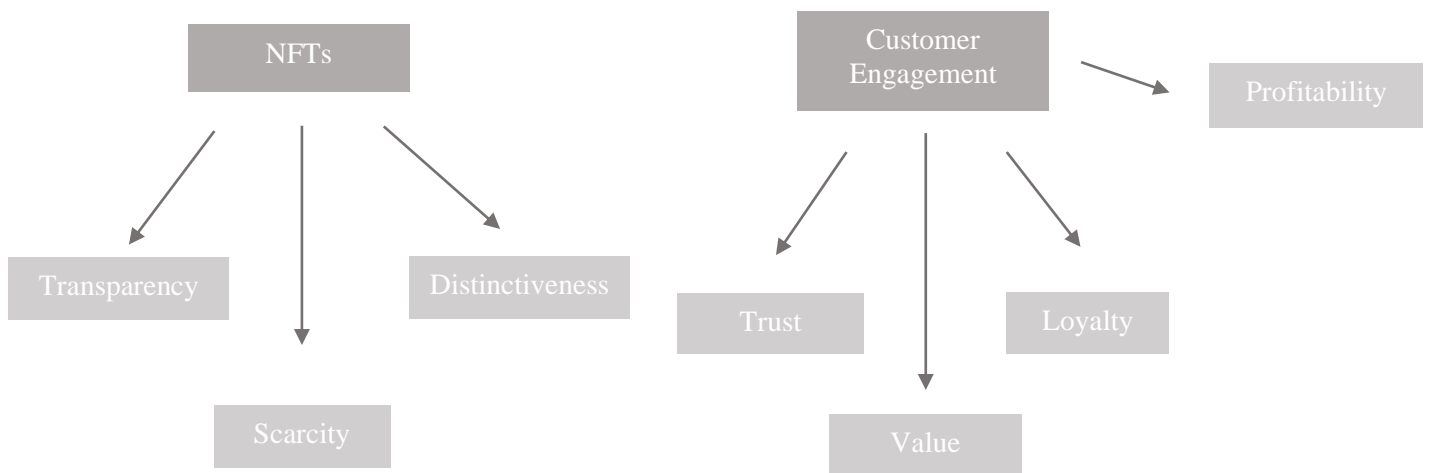


Figure 1. The conceptual model

Source: Model created by the author of this paper based on reaserch by Hollebeek, Spot 2019; Kumar, Reinartz 2016; Naumann, Bowden 2015; van Doorn *et al.* 2010.

Figure 1. Shows the model, created by the author of this paper based on research done by Hollebeek and Spot (2019), Kumar and Reinartz (2016), Naumann and Bowden (2015), and van

Doorn *et al.* (2010), to understand the importance of antecedents in connection with customer engagement and NFTs. The model is relevant for this research due to the fact that based on theoretical data from various sources it is possible that NFTs create the following: scarcity, profitability, distinctiveness, and trust or transparency. According to regulatory engagement theory (RET) which will be further discussed, scarcity maintains attention to a product thus creating engagement. Profitability as an antecedent of customer engagement, might be signified due to the introduction of NFTs. Distinctiveness refers to the uniqueness of NFTs and their value. Trust in regard to NFTs, means its nature as it is based on blockchain technology all operations, transactions, and ownerships are completely transparent, secure, and trustful (Mackenzie, Bērzina 2021, 2).

To understand customer engagement better it is important to look at both positive and negative engagement. While researchers mainly focus on positive customer engagement it is important to also mention negative customer engagement (Naumann *et al.* 2017, 890). According to Hollebeek and Chen (2014), negative customer engagement is “consumers’ unfavourable brand-related thoughts, feelings, and behaviours during focal brand interactions” (Hollebeek, Chen 2014, 63). Juric *et al.*, (2015) propose that there are three drivers of negative customer engagement that coincide with positive customer engagement, affective, cognitive, and behavioural. Affective includes feelings of dislike and anger, cognitive implies certain attention customers show to the negative information about a brand, and behavioural emerges through consumer dissatisfaction (Juric *et al.*, (2015) referenced in Naumann *et al.* 2020, 1472-1473). Negative engagement is an outcome of such events as a direct and indirect negative experience with a brand, dissatisfaction, and doubts about product or service quality or perceived value. The same as with positive customer engagement, the customer-brand relationship is also important when dealing with negative customer engagement, when recurring customers experience dissatisfaction or other negative emotions associated with their purchase, they tend to forgive the brands, although if the level of dissatisfaction gets higher, customers might feel betrayed by the brand (Brodie *et al.* 2016, 281-282). However, it is important to note that according to Juric *et al.* (2016) negative customer engagement does not only include unfavourable thoughts, feelings, and behaviours but there is also a difference between negative customer engagement and engagement with negative valence mainly based on their antecedents (Do *et al.* 2019, 123). On the contrary, Bowden *et al.* (2017) define negatively valenced customer engagement as customers’ experience of negative cognitive, emotional, and behavioural inputs made during interactions with customers (Bowden *et al.* 2017, 880). Hollebeek and Chen (2014) provide information on elements of negatively valenced

customer engagement, they identify cognitive, emotional, and behavioural aspects (Hollebeek, Chen 2014, 66). Cognitive implies unfavourable and negative thoughts about a brand or product, emotional includes brand-related dislike and anger, and lastly behavioural encompasses a willingness to perform negative engagement (Bowden *et al.* 2017, 880). In this research, it is important to focus on both concepts and take into attention affective, cognitive, and behavioural aspects of negative customer engagement as well as similar aspects of negatively valenced customer engagement which include cognitive, emotional, and behavioural factors.

## **1.2. Non-fungible tokens**

NFTs stand for non-fungible tokens. Non-fungible tokens mean that they cannot be replaced or exchanged by the tokens of the same value (Wilson *et al.* 2021, 4), which means that NFTs are unique and distinct (Fernandez 2021, 7). NFTs are based on blockchain technology by which it is secured and verified (Mackenzie, Bērzina 2021, 2). NFTs are also being characterised as a certificate of ownership (Das *et al.* 2021, 1), which means that they can record the ownership of digital, tangible, and intangible items (Chohan, Paschen 2021, 3). For marketers, NFTs provide a new opportunity to engage with customers, by creating a unique value, sense of ownership, and sacristy, it is possible to interact with customers on a new level and provide them a unique purchasing experience. As NFTs are becoming more popular, Treiblmaier (2021), states that they have the potential to encourage interaction and provoke attention towards the product and the brand itself (Treiblmaier 2021, 7).

When talking about the ways to buy and sell NFTs, people usually misunderstand two different terms coin and token. Coin-based cryptocurrencies, such as Ethereum or Bitcoin, have their own blockchains. Tokens, on the other hand, are cryptocurrencies without their own blockchains. Thus, it means that tokens use the blockchain of another coin. The most prominent blockchain on which NFTs are developed and used is the Ethereum blockchain (Fortnow, Terry 2021, 12).

Different types of non-fungible tokens can be created, sold, and purchased. The most common ones are digital art and collectibles, although NFTs are not limited to only those, it also includes digital trading cards, digital real estate, event tickets, and tweets. To begin with, digital art and collectibles imply such forms (Fortnow, Terry 2021, 18):

- Videos

- Images
- Gifs
- Audio

A good example of a brand that already uses NFTs would be a sports brand named National Basketball Association (NBA). NBA create NFTs collection named NBA Top Shots, which incorporates short videos of moments in NBA history (Fortnow, Terry 2021, 19), it is safe to say that NFTs increased the profits of the sports brand (Wilson *et al.* 2021, 7). Moreover, non-fungible tokens provide an opportunity for creators to gain revenue even when the initial buyer decides to resell its digital item, this procedure is called royalty, and in such a way, NBA still receives revenue from its “NBA Top Shot” after the first customer resells it to another one (Laurence, Kim 2021, 100).

The use of NFTs is not limited to digital items, it can be connected to a physical item as well. To elucidate, when purchasing Adidas’ NFT digital collectible, a consumer receives additional physical goods. NFT is evolving and new concept and it is yet to be acknowledged and accepted by big masses. According to a survey conducted by the author of this paper, more than 66 percent of participants did not possess enough knowledge about NFTs, and thus it is important for marketers to introduce and promote NFT’s distinctiveness (Chohan, Paschen 2021, 5). Another feature that significantly distinguishes NFTs from other goods proposed to customers is scarcity as NFTs are one-of-a-kind tokens, according to Franks and Higgins, scarcity increases value, by building scarcity into the product marketer can enhance its value. According to regulatory engagement theory (RET) which has been introduced by several research papers as an important aspect of customer engagement (Hollebeek, Chen 2014; Sehnert *et al.* 2014), RET proposes that engagement refers to continuous attention, thus helping scarcity to maintain that attention (Sehnert *et al.* 2014, 823-824). Moreover, value is being described as a motivational force that attracts the attention of customers, to exemplify, when thinking of something which gives positive value customer is more likely to be drawn to it (Higgins 2006, 442).

Companies are starting to use NFTs to create bonds with customers (Treiblmaier 2021, 7). By virtue of non-fungible tokens, brands can not only improve their loyalty programs, and create unique experiences and digital assets but also strengthen brand communities. Brand communities can be also regarded as an outcome of customer–brand engagement (Witz *et al.* 2013). NFTs also create a scarcity (Chohan, Paschen 2021, 4) or “a fear of missing out” (Wei 2018), and according

to Trope and Liberman (2010), construal-level theory, scarcity has an effect on consumer perception of the product (Trope, Liberman, 2010). In terms of NFTs, scarcity is provided in different aspects, both in its limited availability for customers and unique ownership “signature” for creators of tokens, thus resulting in authentication (Chohan, Paschen 2021, 3-4).

Non-fungible tokens are newly introduced and rapidly emerging technology, it is important to not only look at their beneficial contribution to customer engagement but also at a negative one. There has been a recorded issue with the security of ownership, in other words, already created NFT has been stolen and sold as an original one, thus this questions its uniqueness (Wilson *et al.* 2021, 13). Non-fungible tokens are known to be using big amounts of energy to proceed with verification processes, hence causing harm to the environment (Truby *et al.* 2022, 4), thus this is important, especially for brands that are committed to being environmentally conscious to consider this before starting to operate on NFT marketplace (Chohan, Paschen 2021, 6) as this can jeopardise their corporate social responsibility. According to the AIDA hierarchy which describes four stages customers go through during the purchasing process: awareness, interest, desire, and action, some customers tend to purchase NFTs due to it being desirable (Chohan, Paschen 2021, 2-6), however, NFTs are usually high priced, and customers might lack understanding of its nature and value (Mackenzie, Bērzina 2021, 7), thus they can eventually be dissatisfied with their purchase resulting in negative thoughts or actions towards the brand (Brodie *et al.* 2016, 281-282). Other challenges associated with non-fungible tokens concern privacy (Regner *et al.* 2019, 13), as the biggest portion of transactions are made on the Ethereum blockchain and it provides with pseudo-anonymity it is possible to eventually identify the real identity of a person (Rehman *et al.* 2021), meaning that NFTs do not provide complete privacy.

According to information provided in this chapter and referring to the views of Fernandez (2021); Mackenzie, Bērzina (2021); Laurence, Kim (2021), certain characteristics of NFTs, include the uniqueness of each token, it is generally recognized that NFTs are secure although according to some cases it is a somewhat false assumption, provides additional value for customers usually in a form of physical item or membership in the community, and due to royalties’ continuous income after reselling of the token.

### **1.2.1. Blockchain technology**

With the introduction of blockchain technology, a lot has changed not only in the IT and financial sector but also in business and marketing processes. It was initially introduced to the public

through its mostly known application, the cryptocurrency Bitcoin (Antoniadis *et al.* 2019, 1). Blockchain is composed of a series of data blocks linked together to form a chain (*Ibid.*, 2), it is also known as distributed ledger technology (DLT), due to the fact that it allows to record and distribute data but not edit it, thus preventing destructive erasure or change of data (Hayes 2022). According to Boukins (2020), a blockchain is a digital database that allows to keep of transaction records (Boukins 2020, 308). There are six main characteristics of blockchain that were presented by Temjanovski *et al.* (2021), those include transparency, decentralized nature, trust, autonomy, open-source access, anonymity, and immutability. Immutability means that data on the blockchain cannot be changed or deleted (Temjanovski *et al.* 2021, 16), the decentralized nature of blockchain means that data is recorded and updated on multiple copies of the blockchain, and it does not have one central authority (Fortnow, Terry 2021, 62), providing security for non-fungibility meaning the uniqueness of NFTs (Wilson *et al.* 2021, 5). Due to its decentralized nature, blockchain does not require a third party or intermediary participation (Hooper, Holtbrügge 2020, 186) in transactions (Temjanovski *et al.* 2021, 17) making them more trustworthy (Adigüzel 2021, 77-85) and less costly (Treiblmaier 2021, 6), in case of NFTs decentralisation allows creators and brands to directly communicate with customers.

Blockchain application in marketing has not been widely discussed (Jain *et al.*, 1-2) specifically in marketing and most significantly how it influences and increases engagement (Boukins, 2020, 310), although some articles suggest its applications in marketing processes, such include revolutionizing loyalty programs (Agrawal *et al.* 2018, 80) through decentralization loyalty programs can be improved in security, privacy, tokenized of reward points instead of using coupons (Temjanovski *et al.* 2021, 19), and building trust in digital advertising sector (Antoniadis *et al.* 2019, 4), moreover blockchain provides an opportunity to engage customers through other application such as tokens, according to Treiblmaier (2021), tokens have a great potential of being a unique form of involvement of product development at its initial stages. In the blockchain context, tokens are digital assets that identify a collection of entitlements (Treiblmaier 2021, 3-7). Patel (2021) proposes that non-fungible tokens, that are based on blockchain technology, should be widely used by companies as they provide a unique brand experience, increase interaction and awareness, and stimulate interest in a brand (Patel 2021). Other than that, blockchain technology allows for transparency and integrity of business processes which are extremely important for customers, thus making brands more responsible for their actions (Ertemel 2018, 39 - 40), and in turn affect customers' loyalty which has been defined as an antecedent of customer engagement (Brodie *et al.* 2011, 253). Blockchain technology is closely connected to NFTs, due to this fact it

is important to analyse the threads as well as the benefits of the blockchain. As with the non-fungible tokens, blockchain technology poses a threat to the environment due to its high energy consumption (Hooper, Holtbrügge 2020, 193).

There are some characteristics of blockchain technology that should be noted, in general, most of the research articles (Fortnow, Terry 2021; Rajasekaran *et al.* 2022) on blockchain technology highlights the following characteristics: decentralized nature, transparency in operations and integrity in business procedures, autonomy, trust, open-source access, immutability, and anonymity.

## **2. RESEARCH METHODOLOGY**

This chapter introduces the methodology and methods that were used to conduct this study. The reason for choosing a quantitative method for this study, the choice of certain scaling options for different questions, and the description of data analyses methods are presented in this chapter.

### **2.1. Methodology**

This research adopts the positivism paradigm as the basis, since positivism considers mathematical and logical proof for any logically accepted proposition. Positivism also relies on theory to explain or forecast social functions as theories serve as a foundation for explaining, forecasting, and influencing certain phenomena. Under the positivism paradigm, it is considered that social events or phenomena can be measured thus it is related to quantitative research and analyses (Saunders *et al.* 2016, 166; Collins, Hussey 2021, 40). Philosophical assumptions to be considered in this research include methodological assumptions, in the case of positivism it means prediction, explanation, and comprehension assisted by generalization, ensuring accuracy and reliability of results through validity and reliability (Saunders *et al.* 2016, 42). Quantitative research has been widely used in marketing, this method allows to collect and perform variable measurements and statistical analysis of numerical data thus providing more precise and numerical data (Wei *et al.* 2013, 319). Quantitative research is suitable for this study as previous research on customer engagement mainly focuses on obtaining quantitative data (Islam, Rahman 2016, 2013; Wei *et al.* 2013), moreover, it will provide a clear result for the aim and questions provided in this thesis. The descriptive method is also implied in this study as it helps to describe the characteristics of a certain population or area of interest in a systematic manner and understand how two variables are connected (Dulock 1993, 154).

To better understand the effect of non-fungible tokens on customer engagement this study uses an online survey, this type of data collection is supported by the positivism paradigm (Collins, Hussey 2021, 44). The questionnaire was created to understand the relationship between customer engagement and NFTs. As there is a lack of secondary data on the topic of NFTs' relation to



customer engagement, there is a need for primary data collection through the questionnaire. However, secondary data was collected for this thesis to understand relevant antecedents of both customer engagement and NFTs, as well as their possible connection with each other, mainly literature review, was used, it is an important part of any research as it gives guidance for future research and direction in which the study shall be conducted (Jain *et al.* 2021, 2). Secondary data also allowed to search for possible factors that might positively and negatively affect customer engagement.

Non-probability sampling was used to collect both types of samples for this study. Snowball sampling was used to reach respondents that do not own NFTs, participants have been chosen on a volunteer basis and asked to spread the questionnaire to other people who might have knowledge about NFTs. A purposive sample was used to contact those who own NFTs, according to Etikan (2016) purposive sampling allows to intentionally select participants that are related to the study (Etikan 2016, 2) in the case of this study participants were chosen according to their relation to NFTs. The population of this study considers people with an understanding of NFTs and those who purchased them before, specifically, those who purchase NFTs from brands, this means that in the Rarible marketplace sample of participants was chosen according to their ownership of tokens from such brands as Adidas, Gucci, Diesel, and Taco Bell. Social Media and email were used to disseminate the questionnaire to those who did not have experience purchasing NFTs. Thus, the population size is drawn from current owners of NFTs presented on the Rarible marketplace, which makes up a total of 523, thus the appropriate sample size would be 222. Taking into account, a sample size of respondents that owns NFTs, it would make sense to take the same sample size of those who do not own NFTs, so the comparison of the results would be logically of the same proportion. As it is particularly hard to predict the response rate for this study as there are no similar studies made before, the author considers a 50% response rate from individuals (Saunders *et al.* 2016, 284).

## **2.2. Research Design**

Data for this research was collected through a questionnaire which is presented in Appendix 1, it is structured as follows: all questions are close-ended, Likert scale was used to measure respondents' attitudes towards the following questions "On a scale, how important are the following factors when making a decision to purchase NFTs?", "Please rate how do you feel about

the following features”, “What are the main characteristics you look at when choosing NFT?”, “NFTs are usually high priced, what is the reason you (would) purchase it?” these questions were used to understand the important characteristics of NFTs for both non-buyers and buyers of NFTs. Another question from this scale’s category is: “Do you think the fact mentioned earlier is important when taking into account your:” this question relates to another question that was about NFTs’ energy consumption. A 5-point ordinal scale was used to measure the level of importance and satisfaction of the questions. The ordinal scale was used here as the order of variables and labelling was important (Collins, Hussey 2021, 188).

“How do you feel about purchasing NFTs after knowing that there might be security issues ...”, and the participants were asked to imagine if their favourite brand is collaborating with a prominent collectible NFT brand to present new tokens “but there is no additional value provided with the purchase of this token, would you be satisfied with this purchase if you lack understanding of token’s actual value?”. These questions provide information on whether respondents consider certain factors positively or negatively, thus allowing them to understand the type of engagement that is being experienced, whether it is positive or negative. Another type of questions used in this research is list questions, it provides respondents with a list of answers from which they can choose multiple or one answer. The purpose of including such type of question was that it ensures respondents had considered all the options before choosing the answers (Saunders *et al.* 2016, 453). The list was used to measure the importance of factors in relation to positive and negative experiences of customers towards a brand selling NFT. The questions were created in consideration of not only NFTs’ characteristics but also includes antecedents of customer engagement such as value, trust, and loyalty. Antecedents were added to Likert scale questions to measure their importance in relation to NFTs.

The questionnaire was sent to respondents who had experience with purchasing NFTs from the Rarible marketplace as it is one of the largest marketplaces for selling and purchasing NFTs as well as it allows to navigate between those who own specific tokens and contact them directly. The questionnaire was distributed via e-mail, and social media to those who did not have experience with purchasing NFTs, and personal messages were used to contact owners of NFTs on the Rarible marketplace.

Data analysis used in this research includes descriptive statistics, as it can be summarized and shown in the form of graphs, tables, and charts (Collins, Hussey 2021, 210). The collected sample

size is 187 people, whereas initially it was supposed to be 200. Respondents' demographics are presented in Figure 3. and Figure 4. this research has divided demographic groups according to generations as it gives a better understanding of which age group and generation commonly or mostly interacts with NFTs. The following generations were considered: Generation Z, Millennials, Generation X, and Baby Boomers.

### **3. EMPIRICAL ANALYSIS**

The goal of this paper was to research how non-fungible tokens affect customer engagement processes, specifically if it has a positive or negative influence. The framework of this study introduces the factors of positive and negative engagement, and positive and negative aspects of non-fungible tokens and proposes possible antecedents that connect non-fungible tokens and customer engagement.

#### **3.1. Results and Analyses**

A questionnaire collected a total of 187 answers from which 109 respondents have not purchased NFTs and 78 had. The questionnaire was divided into the following categories: in the first section, the author collected demographic information, the second section included questions that provide information about respondents' understanding, knowledge, and experience with NFTs, the third part consisted of questions analysing positive and negative features of NFTs to understand the most important ones for customers. The fourth section included questions about the importance of purchasing NFTs from the brand customer's trust. Furthermore, this section examined which of the following characteristics: uniqueness, appearance, security options, and connection to a trusted brand, are considered by customers when they decide or consider purchasing NFTs. The fifth part of the questionnaire contributed to defining which negative characteristics of NFTs affect customers' decisions to purchase and if it results in negative engagement. Lastly, the sixth part included elements of negative engagement such as affective, cognitive, and behavioural. As well as antecedents of positive engagement including satisfaction, loyalty, trust, and increased engagement through social interactions.

The relationship between age groups and the frequency of purchasing NFTs is depicted in Figure 3. Options about age groups in the questionnaire were divided according to generations. Generation Z are aged between 18-25, Millennials are aged between 26-41 and Generation X are between the age of 42 and 57, Baby Boomers were not included in the results chapter as there were no respondents from this age group. 56% of all respondents were in the age group between 18 and

25 making Generation Z the most frequent respondents. 36% of answers were collected from the age group of 26-41 and only 7% were ranged between 42 and 57 years old.

As can be seen from Figure 3, 53% of Generation Z respondents had purchased NFTs before which makes them the most frequent owners of NFTs, the second most frequent owners of NFTs are Millennials with 29%. However, this study collected more answers from non-owners of NFTs, thus the biggest percentage (85%) of non-owners are from Generation X.

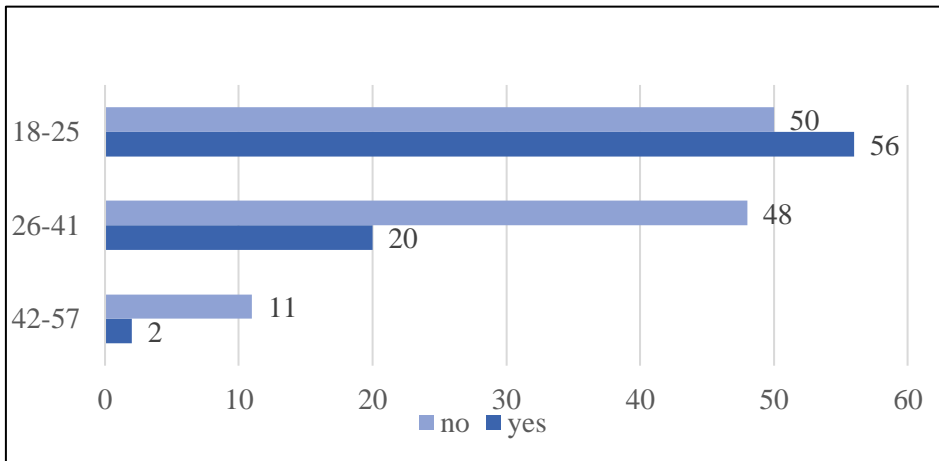


Figure 3. The relationship between age group and purchase of NFTs  
 Source: Author’s calculations based on data from Appendix 2

According to demographic information obtained from the first section of the questionnaire, 55% of respondents were males and 45% were females. Out of the total number of all male respondents, 42% purchased NFTs before and 58% did not. 41% of female respondents purchased NFTs and 59% did not.

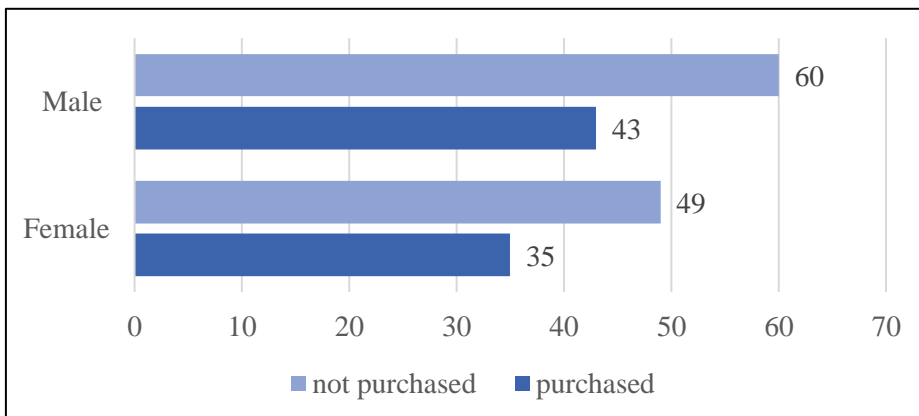


Figure 4. The relation between gender and purchase of NFTs  
Source: Author's calculations based on data from Appendix 2

Next questions were added to the questionnaire to understand if those who did not own NFTs considered purchasing them. Results show that 58% of respondents did not purchase NFTs before and 42% had owned NFTs, but out of the total number of non-owners, 76% considered purchasing NFTs.

As the second section of the questionnaire considered questions about customers' understanding, knowledge, and experience, it can be concluded that 66% of respondents do not think that they possess enough knowledge about NFTs' nature. This question was asked to see how it will affect respondents' answers in section five which focuses on the negative characteristics and nature of NFTs.

The third section collected responses to understand what features of NFTs are perceived positively or negatively and which are the most important. For a better interpretation of the result each feature was analysed separately and compared between generations. Using descriptive statistics, mode for each Generation was found separately. The data allows for a better understanding on what are the most important factors for customers when making the decision to purchase NFTs. Factors can be seen on Figure 5.

Mode value of responses were used to simplify the result for the choice of four factors: membership in the brand's community, access to a loyalty program, access to exclusive physical goods, and uniqueness of NFT. For more precision of the information, the mode was found separately for three age categories: Generation Z, Millennials, and Generation X, data about each generation separately can be found in Appendix 3. The data allows for a better understanding of what features are most commonly chosen as being more important compared to other features. According to this data, for Generation Z the mode for uniqueness is higher than for other choices, which shows that among other factors uniqueness was the most important for Generation Z. For Millennials, the highest mode value is for access to physical good as an additional value to purchase of NFT, determining access to exclusive physical goods as the most important factor. For Generation X, the mode value is 5 for loyalty as the most important factor. The overall results can be seen in Figure 5.

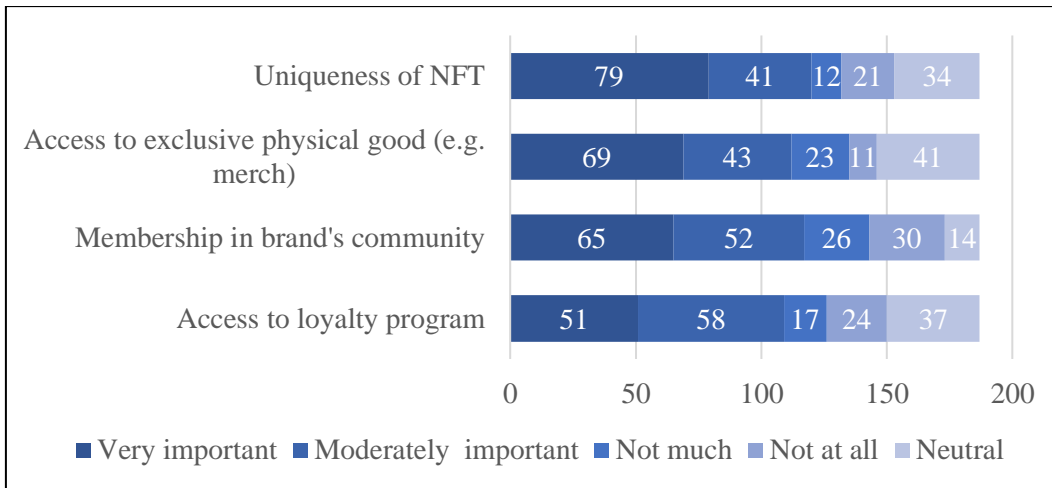


Figure 5. Importance of NFT factors when making a decision to purchase  
 Source: Author's calculations based on data from Appendix 2

To understand which features are more positively accepted the questionnaire considered the following options transparency in operations, uniqueness of NFT, access to exclusive physical good, membership in brand's community and access to loyalty program. Figure 6. Shows the result of the question, 51% of all respondents positively accepted transparency in operations.

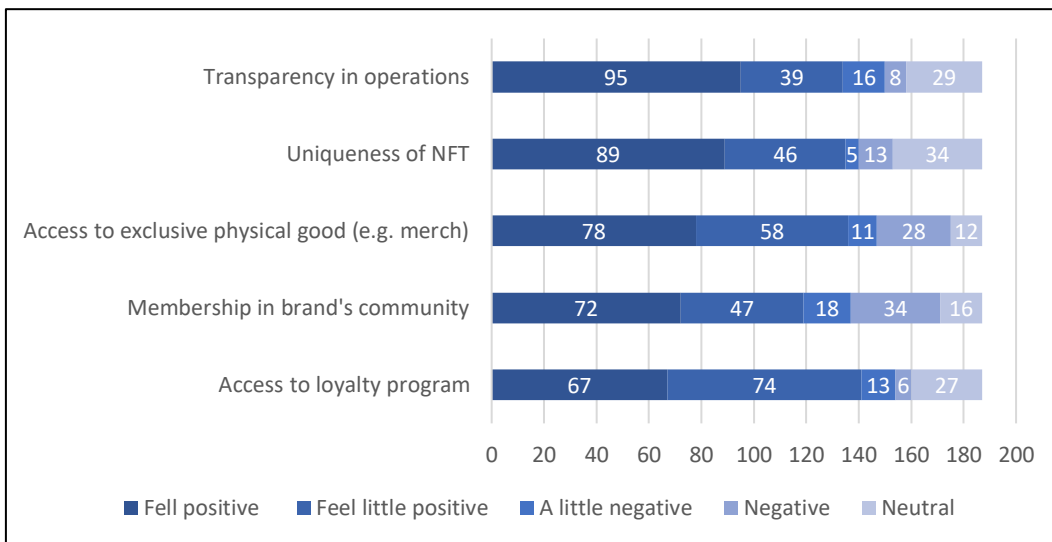


Figure 6. How customers feel about certain features  
 Source: Author's calculations based on data from Appendix 2

The fourth section was devoted to understanding if it is important for customers to purchase NFTs from a brand they trust and simultaneously to look at what characteristics are considered when

choosing NFT, following factors were added to this questions uniqueness, appearance, security options, and connection to a trusted brand.

For better understanding and simplification of results descriptive statistics was used. A 5-point Likert scale of importance was used to assess the importance of trust towards a brand when deciding to purchase NFTs. Mean, median, mode and standard deviation were found. The mean value for owners is 3.6 and for non-owners is 4.35, this means that non-owners tend to consider trust important factor when thinking about purchasing NFTs. Standard deviation is bigger for owners (1.41) than for non-owners (0.66), taking into account mean value of “owners” this means that their answers were rather different, there is those for whom trust is not important at all or they are not sure whether it is important for them or not, so they chose to stay in neutral position thus the mean is 3.6. Standard deviation of “non-owners” respondents is 0.66, hence it can be concluded that most of them consider trust to be important, thus the value of mean is 4.3

Table 1. Descriptive statistics

	Owners	Non-owners
Mean	3.6	4.35
Median	4	4
Mode	4	4
Standard Deviation	1.41	0.66

Source: author’s calculations based on data from Appendix 3

Result of the next question about importance of each NFT characteristic when deciding to purchase token was examined. According to data provided in Figure 7. for 43% of respondents’ security of purchase was the most important characteristics, and most of respondents were rather neutral about NFTs connection to a trusted brand.



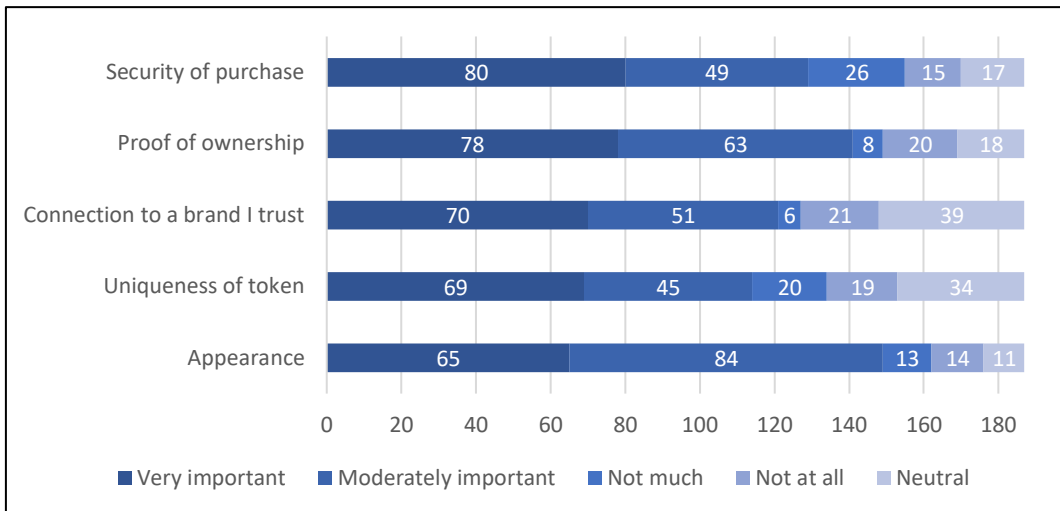


Figure 7. Characteristics customers look at when purchasing NFTs  
 Source: Author's calculations based on data from Appendix 2.

The fifth section of questionnaire analysed negative characteristics of NFTs and their effect on customers' decision to purchase and more importantly if it influences negative customer engagement. Respondents were asked to answer if the fact that NFT system consumes a lot of energy changes their decision to purchase a token. Answers suggest that for 52% of all respondents this fact does not change their decision to purchase, however 48% said that it does.

Because section two included question about whether customers consider themselves to be experience and possess enough knowledge about NFTs nature and 66% of respondents answered that they do not consider themselves knowledgeable enough author can now consider these responses to see how the knowledge of energy consumption by NFT system affects customers trust and loyalty towards a brand. Firstly, the 48% of respondents answered that the fact about energy consumption can change their decision to purchase and as can be seen from Figure 8. 47% of respondents considered that this knowledge also affects their trust toward a brand more than loyalty.

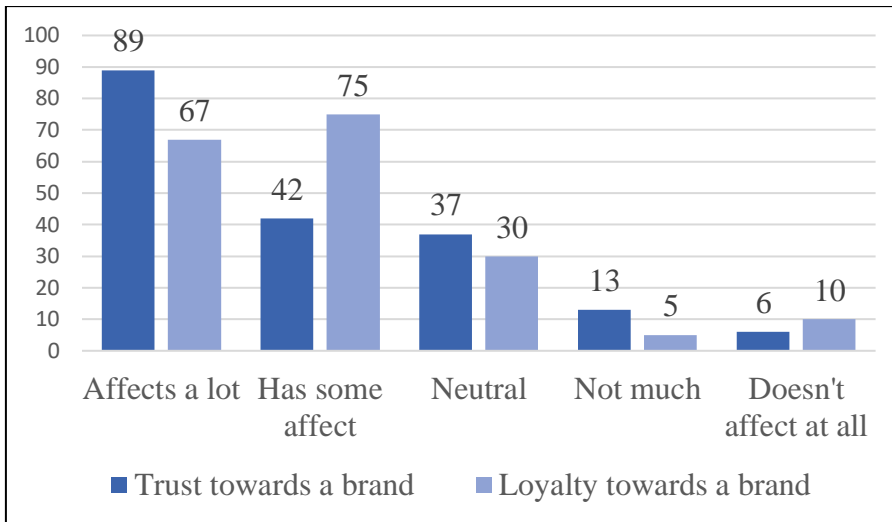


Figure 8. How the fact about energy consumption changes customers' perception of trust and loyalty towards a brand

Source: Author's calculations based on data from Appendix 2.

As NFTs are usually high priced it was important to understand the motives to invest or purchase them. The answers depicted in Figure 9. revealed that the uniqueness of token is considered the main motivator for purchasing a token, and membership is the least important.

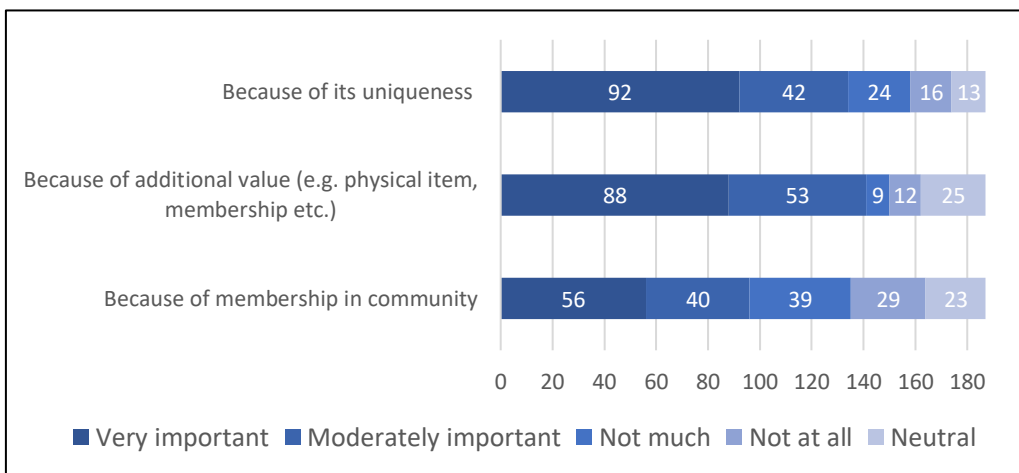


Figure 9. NFTs are usually high priced, possible reasons for purchasing it

Source: Author's calculations based on data from Appendix 2

Another question was asked to measure whether the knowledge about registered security issue with NFTs is perceived negatively by customers. As can be seen from Figure 10. 52% of customers' attitude towards NFTs is likely to change after they acknowledged the fact about recorded security

issues, meaning that the token was copied and sold again, which doubts the originality and uniqueness of real tokens, as well as the security control of NFTs.

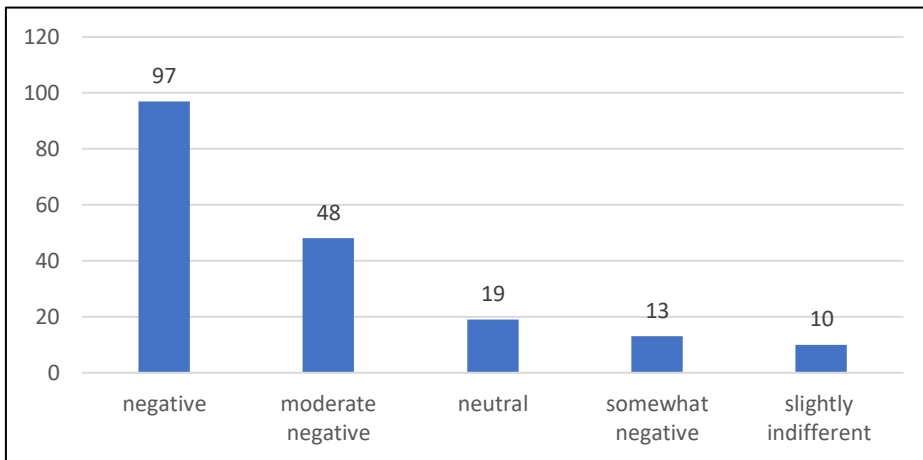


Figure 10. Customers attitude toward NFTs after knowing that there was a registered security issue

Source: Author’s calculations based on data from Appendix 2

The sixth section considered affective, cognitive, and behavioural elements of negative engagement and antecedents of positive engagement such as satisfaction, loyalty, trust, and increased engagement through social interactions.

Chi-square test was carried out to see if there is a relationship between age groups and an element of negative engagement. P-value and Cramer V were analysed to see whether to accept relationship between these two variables at a significance level of 0.05 and to understand how strong the relationship between two variables is. The result of analysis presented in Table 2 show that p-value is 0.04, which means that  $p\text{-value} < 0.05$ , and Cramer V is 0.14 which means that there is a moderate association between age groups and chosen elements.

Table 2. Chi-square test

	Df	P-value	Cramer V
Negative engagement	4	0.04	0.14
Positive engagement	6	0.03	0.16

Source: author’s calculations based on data from Appendix 3

Answers presented in Figure 11. depicts all answers in percentage from three different Generations. Respondents were initially asked to choose what they would experience when encounter negative experience with a brand, they were presented with three options from which they could choose one, two or all three answers. Behavioural element of negative engagement implies the experience of dissatisfaction with a product, Affective means feeling of dislike or anger and lastly, Cognitive imply spreading or trusting negative information about the brand more than positive. As can be seen behavioural element was experiences mostly by Generation Z and Millennials, while cognitive mainly by Generation X.

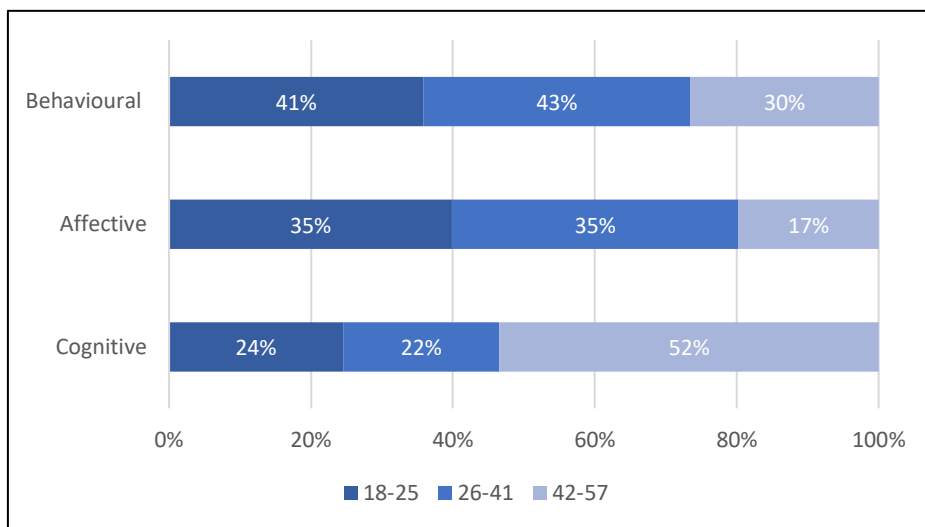


Figure 11. Behavioural, Affective and Cognitive elements that customer encounter when dealing with negative engagement with the brand

Source: Author’s calculations based on data from Appendix 3

Answers presented in Figure 12 shows possible positive experience of customers towards brand. This question considered antecedents of positive engagement that were presented in Figure 1 and social interaction was added as it was recognized by Hughes, Ahearne (2010) as a part of positive engagement.

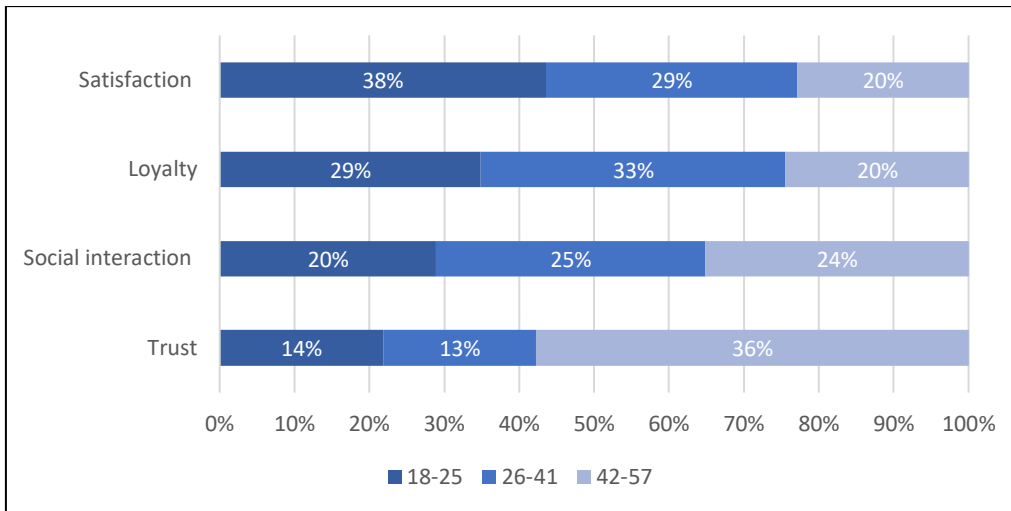


Figure 12. Satisfaction, loyalty, trust, and increased engagement through social interactions that customers encounter when dealing with positive engagement with the brand  
 Source: Author’s calculations based on data from Appendix 3

Similarly, to negative engagement, positive was also analysed using chi-square test. It was possible to find p-value and Cramer V that can be seen on Table 2, p-value is less than the significance level (0.05) and Cramer V is 0.16 showing strong relationship, according to p-value and Cramer V it is possible to say that there is a moderate relationship between age groups and chosen response. For this reason, following results can be made: Generation Z when undergo positive engagement is likely to experience satisfaction, Millennials are likely to feel loyal to a brand, and Generation X is anticipated to feel trustful towards a brand.

The last question contributed to the understanding of how customers understand the value of a token without any additional benefits, from the result shown in Figure 13. it is clear that most of the respondents do not recognize the real value of a token solely, but as can be seen those 53% are mainly “non-owners”. Usually when brands are selling NFTs they implement additional value to it, usually a physical good. However, customers were provided an opportunity to feel either negative or positive about the fact that they do not receive anything else after purchasing, thus results might be biased. On the other hand, while 24% of “owners” also feel rather negative about this fact, 26% would perceive it positively, reason for this could be their prior experience with NFTs and some understanding of its sole value.

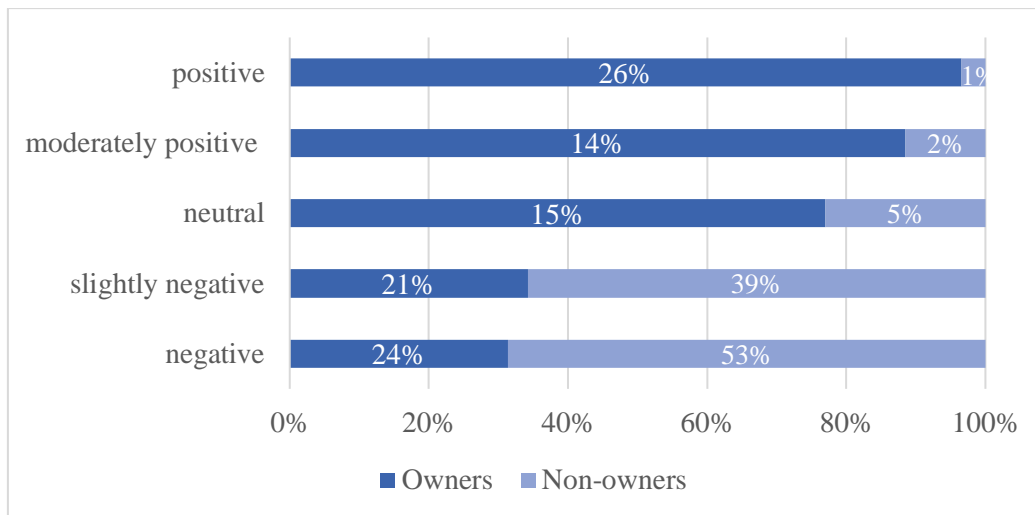


Figure 13. If no additional value provided with the purchase of NFT, how the customer would feel

Source: Author’s calculations based on data from Appendix 3

Due to NFTs extremely gaining a lot of popularity, some impulse purchases could be done by customers, especially towards popular tokens that do not provide additional value to customers, as an example one of the most eminent NFTs is Bored Ape Yacht Club with a big collection of collectible monkeys that do not provide any additional value however customers show increased attention towards them.

### 3.2. Discussion and Recommendations

The data was collected from 187 respondents due to non-sampling error there is a slight difference between a number of non-owners and owners respondents. Study collected more answers from non-owners as it was more convenient to reach them. Study revealed that among non-owners 76% considered purchasing NFTs this means that there is an increasing interest towards NFTs conversely there is still lack on knowledge about NFTs. Among all respondents 66% do not think that they have sufficient knowledge about NFTs, this means that technical part as well as some of negative elements of NFTs such as energy consumption and security issues might not be known for both owners and non-owners of tokens.

For study to be more relevant for marketers to utilize, some data was separately found for three generations: Generation Z, Millennials and Generation X. Sufficient knowledge of each generation’s preferences can help to maintain and engage customers to brand’s activity especially

as brands introduce their tokens and collaborations to create NFTs. Hence, factors that are considered important when making decision to purchase token for Generation Z is uniqueness of token. This means that they value more each token's uniqueness more than other factors such as additional value in form of physical good or loyalty to a certain brand when choosing NFT. The reason for this could be that popular tokens are rare and highly desirable thus this gives an opportunity for current owner to resell it for higher price and due to such thing as "royalty" that was discussed in first chapter it is also profitable for the creator of token in this case a brand because they receive a certain percentage of resold token. Result show that Millennials value more additional value that comes with the purchase of token in case of this study value is depicted in the form of physical good. Generation X preferred loyalty to a brand as the most important factor that affects their purchasing decision. Usually when something new is introduced especially in digital form customers if decide to purchase would most probably purchase a digital product from the brand they feel they can trust (Alam, Yasin 2010, 79).

To understand how to promote NFTs to customers given that there is a chance that most of them do not know much about NFTs, defining how they feel about certain NFT features was important. It can be said that most of respondents are familiar with the concept of transparent nature of NFTs and uniqueness of each token thus these two features were positively accepted. Specific offers such as membership in community and access to loyalty programs should be emphasized more to customers as these two features were not perceived positively due to possible lack of knowledge about these options.

Despite the fact that Generation X were the one that chose loyalty as the most important decision-making factor about whether to purchase token, it was still crucial to understand if there is a difference between those who already own NFTs and those who do not. It was revealed that customers that had not purchased NFTs earlier consider buying NFTs from brand they already trust. To understand in general how trust is significant, respondents were asked to rate several characteristics at ones. For this time security of purchase and proof of ownership were the most important characteristics when deciding to purchase token. Reason for this is that when provided multiple choices respondents considered aforementioned characteristics more important in comparison to trust toward a brand, they would like to purchase an NFT.

Testing customers real knowledge about NFTs was also important as it allowed to see how some negative factors affect engagement. Unfortunately, it cannot be said with certainty that massive

energy consumption by NFT system negatively affect customers' decision as there were rather similar number of answers on two provided choices: 58% said that this fact does not change their decision and 48% said that it does change. However, it can be noted that most of respondents agree that this fact affect their trust toward a brand. If a brand is known for being environmentally friendly this fact could negatively impact, it. On the contrary, 52% of respondents were certain that they will have negative attitude towards NFTs after acknowledging the fact that there has been registered security issue with NFTs. This jeopardizes its transparent nature and uniqueness of tokens. Predictably, uniqueness was considered the main motivator for purchasing token even if it is high priced.

Furthermore, understanding each generations' response to negative and positive engagement is important as it can contribute to better understanding of prevention or further action that should be taken from a brand's side in case of negative engagement. Due to performing chi-square analyses it can be said that there is a moderate relationship between generations and customers' response to negative and positive engagement. Generation Z and Millennials would respond to negative engagement with behavioural element of negative engagement, this means that they are more likely to be dissatisfied with the product and won't be engaging with the brand anymore. Generation Z would experience cognitive element more, to put it more simply they are more likely to trust or spread negative information about the brand more that positive. Furthermore, same analyses were used to understand if there is a connection between generations and answers, similarly, to results of chi-square test on negative engagement, it is possible to draw following conclusions. Generation Z is likely to feel satisfaction with the end product and loyalty to a brand, likewise Millennials would feel more loyal and satisfied with the end product. Generation X would experience trust toward a brand in case of having positive engagement with them, moreover there is likely to be an increase of social interaction with a brand, that include e-WOM and other types of social interactions which can help to engage a bigger range of prospective and current customers.

Lastly, customers understanding of token value in general without additional perks could contribute to better understanding of what customers expect to receive when purchasing a token from a brand, thus an example of Adidas and their collaboration with prominent collectible tokens were introduced to respondents. 53% out of 100% of "non-owners" respondents agreed that if they were purchasing from a brand, they would expect to receive not only a token but something in



addition, but the opinion on that matter from “owners” was rather different 26% would perceive a token without additional value positively while 24% of them would not.

The focus of the questionnaire was to gain information from two customer types, owners and non-owners of NFTs. Generations were collected to understand how specific answers differs among those groups. To the knowledge of this author, there has been a little research done to understand the connection and influence of non-fungible tokens on customer engagement. Based on the quantitative approach used in this thesis, the author proposes the following recommendations.

As can be seen from the results and analyses section, the biggest proportion, to be exact 56% of all respondents belong to Generation Z, furthermore, 71% of those who purchased NFTs belonged to Generation Z, thus it is important for brands to focus more on engaging with this target group, as they are the most interested audience. Based on results and discussion, following recommendations can be made to brands and marketers:

1. When promoting NFTs to audience where Generation Z predominates, emphasize on unique token value should be considered. Where Millennials make up the bulk of the audience, emphasizes should be made on what additionally customers will receive with the purchase, if brand is not offering any additional value but offers such opportunities as membership or loyalty program access this should be brought to the attention of customers of this category as they are more likely to be influenced by these factors. Showing that purchasing NFTs is protected as well as beneficiary should be highlighted when Generation X prevails in the targeted audience.
2. It is important to consider security of purchase and other security issues that could affect customers such as copy of existing token which result in loss of original token's value. As results showed that customers consider security an important factor when choosing token, issues with security can lead to customers negative engagement. Moreover, as study has showed non-owners are more likely to purchase NFTs from the brand they trust, for this reason it is important to maintain security of purchase to avoid negative engagement.
3. This study revealed that in general customers are likely to expect additional value when purchasing a token from a brand whether there is a collaboration with popular collectible tokens or not, they would be more satisfied with the purchase if additional value is provided.

## CONCLUSION

This thesis aimed to research how non-fungible tokens affected customer engagement processes with the support of research questions, that helped to build up and focus this paper on characteristics, antecedents, positive and negative customer engagement, and NFTs. The topic of NFTs was considered for this thesis due to its novelty and undiscovered potential in connection to customer engagement.

The main findings of this thesis include important notes for marketers on implementing NFTs in the customer engagement strategies, as well as on which age group it is better to focus on and to better understand the expectations of customers that did not purchased NFTs before and those who did. As the study collected a total of 187 answers and there was a slight difference in the number of respondents from two initial groups of non-owners and owners, study collected more answers from non-owners, for this reason Generations were also considered. Furthermore, this paper provided characteristics that shall be considered when dealing with different audiences, such include uniqueness, presenting additional value that comes with the purchase and ensuring security of purchase.

Answering the first research question, it can be concluded that NFTs can result in positive engagement as well as negative due to some factors. First of all, it is important for brand, if decided to be involved with this novel digital technology, to promote tokens' positive features, such as uniqueness, value and other additional benefits that comes with token as this is what customers are more likely to expect. Secondly, if brand promotes itself as environmentally conscious it should consider that NFTs consume a lot of energy to perform operations and transactions this fact can jeopardise brand's philosophy and assuming that audience of the brand is sustainable, this fact can result in negative engagement by means of losing customers' trust. Despite the fact that this paper provided information that a lot of people do not have sufficient knowledge about NFTs, there is possibility that such thing as energy consumption might not be revealed, nonetheless this fact can be disclosed overtime.

The second research question was presented to understand how engagement differs among two groups in connection with NFTs. This question contributed to the knowledge about how to better introduce NFTs to those who have not purchased them. To illustrate, for those who have not purchased NFTs, customer engagement antecedent as trust was important when and if they decide to purchase. This shows that if the brand's audience is not frequent NFT purchaser, they would be most likely to purchase it from the brand they trust, thus building loyal and trustful relationship with the audience is important. Those who already had experience in purchasing NFTs "owners" do not consider trust a very important factor, moreover "owners" response to a token without additional value can be perceived more positively than by "non-owners". Additionally, this paper considered responses from different generations as this could be an important factor especially when dealing with novel technology. As expected, younger generations are more open to new technologies, thus biggest number of owners were in category of Generation Z. It should be noted that Generation Z understands the uniqueness which has been identified as one of the main NFTs characteristics, more precisely than other generations. Above all, there is different elements that have more influence on each Generation, for this reason following propositions can be made:

1. In case of negative engagement, if target audience mainly falls under age category of Generation Z and Millennials they will likely experience dissatisfaction with a (digital) product (behavioural element), as Millennials consider additional value important addition to NFTs they can be dissatisfied if it is not provided. When X predominates targeted audience, negative engagement can be shown in the form of cognitive element, for example spread or trust for negative information about the brand. Possible motivators for this could be the energy consumption by NFTs, specifically in cases of sustainable businesses and security issues with tokens, such as copying of tokens or transactional issues.
2. In case of positive engagement, target audience of with Generation Z representatives will be satisfied with the product regardless of its physical or digital form. Millennials appear loyal to a brand due to positive experience; Generation X is likely to be more trustful to a brand.

The limitation of this study includes the sample size and population it was drawn from, the sample was collected from people that were more convenient and easier to reach those people including mainly non-owners, owners were contacted through Rarible marketplace although answers receiver were smaller than initially expected. Future studies focusing on other marketplaces or considering multiple platforms for purchasing NFTs might yield different results because the number of brands selling NFTs on Rarible is limited on other marketplaces there are more options,

moreover, some brands have separate platforms for selling NFTs, but it should be noted that it might be difficult to contact owners of NFTs through separate platforms. Considering a specific set of brands that use NFTs or sector such as apparel or food might as well yield different results, for example, this study focused on one marketplace which did not have a lot of different brands present, thus the sample was drawn from a few of them which are from different sector and price range, so generalization of the sector should be considered for further studies. Moreover, the study did not consider all possible features of NFTs, for example, trading and investing could be added and examined in the paper as well as it might be one of the engagement practises of a brand, as these two features are being utilized by those who purchase NFTs however there is a possibility that it will not be relevant for brand's audience considering if biggest part of audience are not experienced with NFTs.

In conclusion, as there is a growing number of innovations that are widely implemented in different business operations and fields, it is important to contribute to the understanding of this technologies and their relation and effect on different business processes , in case of this paper, as was acknowledged it is important to understand the relationship and effect of NFTs on customer engagement as NFTs when used by brands have a possibility to result whether in positive or negative engagement, which can further affect brand as a whole.

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# APPENDICES

## Appendix 1. Survey questions

### Customer Engagement and NFTs

This survey is created for the purpose to gain information about customer engagement and non-fungible tokens (NFTs). If participants had experience purchasing NFTs or thinking of purchasing one, the author of this survey kindly asks to answer the questions of this survey.

Thank you for taking time to answer the questions!

N.B. All answers are anonymous and used only for the Bachelor's thesis.

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\* Kohustuslik

#### Section 1

What is your age? \*

- 18-25
- 26-41
- 42-57
- 58 or older

What is your gender? \*

- Male
- Female

#### Section 2

Have you purchased NFTs before? \*

- Yes
- No

If not, have you thought about purchasing NFTs?

- Yes
- No

Do you consider yourself to be experienced and poses enough knowledge about NFTs nature? \*

- Yes
- No

---

### Section 3

---

On a scale, how important are the following factors when making decision to purchase NFTs? \*

	Very important	Moderately important	Neutral	Not much	Not at all
Membership in brand's community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to loyalty program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to exclusive physical good (e.g. merch)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uniqueness of NFT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Please rate how do you feel about the following features: \*

	Feel positive	Feel little positive	Neutral	A little negative	Negative
Membership in brand's community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to loyalty program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to exclusive physical good (e.g. merch)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uniqueness of NFT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transparency in operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

#### Section 4

When choosing NFT how important it is for you to purchase it from the brand you trust, or it does not matter for you. \*

	1	2	3	4	5	
Not important at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very important

What are the main characteristics you look at when choosing NFT \*

	Very important	Moderately important	Neutral	Not much	Not at all
Uniqueness of token	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security of purchase	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proof of ownership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Connection to a brand I trust	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

#### Section 5

NFT system consumes a lot of energy. Do you think this fact changes your purchase decision? \*

- Yes  
 No

Do you think the fact mentioned earlier is important when taking into account your : \*

	Very important	Moderately important	Neutral	Not much	Not at all
Trust towards a brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loyalty towards a brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

NFTs are usually high priced, what is the reason you (would) purchase it? \*

	Very important	Moderately important	Neutral	Not much	Not at all
Because of additional value (e.g. physical item)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of its uniqueness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Because of membership in community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you feel about purchasing NFTs after knowing that there might be security issues (your token can be copied and sold once more, meaning that it will lose its uniqueness) \*

	1	2	3	4	5	
Indifferent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Negative

## Section 6

If you have a negative experience in relation to a brand selling NFT, you would experience which of the following? \*

- Feeling of dislike and anger
- Spreading or trusting negative information about the brand more than positive
- Experience of dissatisfaction toward a product

If you have a positive experience in relation to a brand selling NFT, you would experience which of the following? \*

- Satisfaction with the end product (whether digital or physical)
- A sense of loyalty to a brand
- A sense of trust to a brand
- Increased social interaction with a brand and its community

Imagine your favorite brand collaborating with Bored Ape Yacht Club (one of the most famous ape/monkey collectibles, see the picture below) to introduce new NFTs of limited edition, but there is no additional value provided with purchase of this token, would you be satisfied with this purchase if you lack understanding of token's actual value? \*



1      2      3      4      5

Negative                                    Positive

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## Appendix 2. Questionnaire data

Question	Answer options	Number of answers	
What is your age?	18-25	106	
	26-41	68	
	42-57	13	
	58 or older	0	
What is your gender?	Male	103	
	Female	84	
Have you purchased NFTs before?	Yes	78	
	No	109	
If not, have you thought about purchasing NFTs?	Yes	83	
	No	26	
Do you consider yourself to be experienced and poses enough knowledge about NFTs nature?	Yes	64	
	No	123	
On a scale, how important are the following factors when making decision to purchase NFTs?	Membership in brand's community	Very important	65
		Moderately important	52
		Neutral	14
		Not much	26
		Not at all	30
	Access to loyalty program	Very important	51
		Moderately important	58
		Neutral	37
		Not much	17
		Not at all	24
	Access to exclusive physical good (e.g. merch)	Very important	69
		Moderately important	43
		Neutral	41
		Not much	23
		Not at all	11
	Uniqueness of NFT	Very important	79
		Moderately important	41
		Neutral	34
		Not much	12

		Not at all	21
Please rate how do you feel about the following features:	Membership in brand's community	Feel positive	72
		Feel little positive	47
		Neutral	16
		A little negative	18
		Negative	34
	Access to loyalty program	Feel positive	67
		Feel little positive	74
		Neutral	27
		A little negative	13
		Negative	6
	Access to exclusive physical good (e.g. merch)	Feel positive	78
		Feel little positive	58
		Neutral	12
		A little negative	11
		Negative	28
	Uniqueness of NFT	Feel positive	89
		Feel little positive	46
		Neutral	34
		A little negative	5
		Negative	13
Transparency in operations	Feel positive	95	
	Feel little positive	39	
	Neutral	29	
	A little negative	16	
	Negative	8	
When choosing NFT how important it is for you to purchase it from the brand you trust, or it does not matter for you.	Very important		67
	Moderately		94
	Neutral		7
	Not much		4
	Not important at all		15



What are the main characteristics you look at when choosing NFT?	Uniqueness of token	Very important	69
		Moderately important	45
		Neutral	34
		Not much	20
		Not at all	19
	Security of purchase	Very important	80
		Moderately important	49
		Neutral	17
		Not much	26
		Not at all	15
	Appearance	Very important	65
		Moderately important	84
		Neutral	11
		Not much	13
		Not at all	14
	Proof of ownership	Very important	78
		Moderately important	63
		Neutral	18
		Not much	8
		Not at all	20
Connection to a brand I trust	Very important	70	
	Moderately important	51	
	Neutral	39	
	Not much	6	
	Not at all	21	
NFT system consumes a lot of energy. Do you think this fact changes your purchase decision?	Yes		89
	No		98
Do you think the fact mentioned earlier is important when taking into account your:	Trust towards a brand	Very important	89
		Moderately important	42
		Neutral	37
		Not much	13

		Not at all	6
	Loyalty towards a brand	Very important	67
		Moderately important	75
		Neutral	30
		Not much	5
		Not at all	10
NFTs are usually high priced, what is the reason you (would) purchase it?	Because of additional value (e.g. physical item)	Very important	88
		Moderately important	53
		Neutral	25
		Not much	9
		Not at all	12
	Because of its uniqueness	Very important	92
		Moderately important	42
		Neutral	13
		Not much	24
		Not at all	16
	Because of membership in community	Very important	56
		Moderately important	40
		Neutral	23
		Not much	39
		Not at all	29
How do you feel about purchasing NFTs after knowing that there might be security issues (your token can be copied and sold once more, meaning that it will lose its uniqueness)	Negative		97
	Moderately negative		48
	Somewhat negative		19
	Slightly indifferent		13
	Indifferent		10
If you have a negative experience in relation to a brand selling NFT, you would experience which of the following?	Feeling of dislike and anger		78
	Spreading or trusting negative information about the brand more than positive		60
	Experience of dissatisfaction towards a product		95
If you have a positive experience in relation to a brand selling NFT, you would	Satisfaction with the end product (whether digital or physical)		90
	A sense of loyalty to a brand		81

experience which of the following?	A sense of trust to a brand	42
	Increased social interaction with a brand and its community	63
Imagine your favorite brand collaborating with Bored Ape Yacht Club (one of the most famous ape/monkey collectibles, see the picture below) to introduce new NFTs of limited edition, but there is no additional value provided with purchase of this token, would you be satisfied with this purchase if you lack understanding of token's actual value?	Positive	21
	Moderately positive	13
	Neutral	17
	Slightly negative	59
	Negative	77

### Appendix 3. Collected data for Statistical analyses

18-25	Measuring importance of factors when deciding to purchase NFTs			
	membership in brand's community	access to loyalty	access to exclusive physical good	uniqueness of NFTs
Very important	49	13	19	62
Moderately important	32	36	33	27
Neutral	5	32	29	6
Not much	12	6	22	6
Not at all	8	19	3	5

26-41	Measuring importance of factors when deciding to purchase NFTs			
	membership in brand's community	access to loyalty	access to exclusive physical good	uniqueness of NFTs
Very important	16	31	48	17
Moderately important	19	20	5	12
Neutral	0	4	6	21
Not much	13	9	1	4
Not at all	20	4	8	14

42-57	Measuring importance of factors when deciding to purchase NFTs			
	membership in brand's community	access to loyalty	access to exclusive physical good	uniqueness of NFTs
Very important	0	7	2	0
Moderately important	1	2	5	2
Neutral	9	1	6	7
Not much	1	2	0	2
Not at all	2	1	0	2

Data for Descriptive Statistics used on question about importance of choosing trusted brand for purchase of NFTs (result presented on Table 1.)		
	owners	non-owners
Very important	22	45
Moderately important	34	60
Neutral	5	2
Not much	3	1
Not important at all	14	1

Observed data for performing chi-square test on Negative engagement elements (Table 2.)			
	18-25	26-41	42-57
Spreading or trusting negative information more than positive (Cognitive element)	28	20	12
Experience of dissatisfaction toward a product (Behavioural element)	48	40	7
Feeling of dislike and anger (Affective element)	41	33	4

Observed data for performing chi-square test on Positive engagement antecedents (Table 2.)			
	18-25	26-41	42-57
Satisfaction with the end product (whether digital or physical)	56	30	4
A sense of loyalty to a brand	43	34	5
A sense of trust to a brand	20	13	9
Increased social interaction with a brand and its community	30	25	8

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